REMARKS

Claims 1, 3-5, 7, and 9-15 are pending and under consideration. The text of pending claims is included herein for convenience of the Examiner.

PAGE 4: ALLOWABLE SUBJECT MATTER

The Examiner indicates that claims 1, 4-5, and 10-12 are allowed. Applicants thank the Examiner for the indication of allowable subject matter.

PAGE 2: REJECTION OF CLAIM 3 UNDER 35 U.S.C. §102(b) AS BEING ANTICIPATED BY KOGA ET AL. (U.S.P. 5,617,234)

The Examiner rejects independent claim 3 under 35 U.S.C. §102(b) as being anticipated by Koga.

According to aspects of the present invention, an arrayed waveguide grating (AWG) is a wave synthesizer, e.g., a coupling filter. (See, for example, AWG 10 as shown in FIGs. 12 and 13 of the present application). According to aspects of the present invention, an AWG multiplexes optical signals of different wavelengths λ_1-λ_n that are respectively input from one of a plurality of input ports.

In contrast to the present invention, Koga teaches an AWG that does not multiplex signals of different wavelengths, but rather is a wave separator, e.g., a branching filter. For example, as Koga discusses (col. 6, lines 36-52 as shown in FIG. 4):

> . . . a reference optical signal (wavelength λ_0) and a WDM signal to be monitored (wavelength λ_1-λ_n) are inputted to a predetermined input waveguide of an AWG (Arrayed-Waveguide Grating) 12 after multiplexed by an optical coupler 11. The AWG 12 includes . . . in this order: an input waveguide array 32 formed on a substrate 31; an input concave-slab waveguide 33; a waveguide array 34 including a plurality of waveguides which progressively become longer by a length difference Δ_L , an output concave-slab waveguide 35; and an output waveguide array 36.

(Emphasis added).

As provided in MPEP §706.02 entitled Rejection on Prior Art, anticipation requires that the reference must teach every aspect of a claimed invention. Koga does not support an anticipatory-type rejection by not describing features recited in the present application's claims.

Independent claim 3 recites a wavelength multiplexing optical apparatus including "an arrayed-waveguide grating having a first output port outputting the multiplexed signal carrying the first group of optical signals of different wavelengths respectively input from input ports, and a second output port outputting a pilot signal input from an input port, wherein said first group of

optical signals and said pilot signal are transmitted only once by a common arrayed-waveguide; light emitting means for applying said pilot signal." (Emphasis added).

Koga does not teach a multiplexing apparatus including an AWG "having a first output port outputting the multiplexed signal carrying the first group of optical signals of different wavelengths respectively input."

In contrast to aspects of the present invention, as shown in FIG. 12 and FIG. 13 for example, Koga (See, for example, Koga FIG. 4) teaches that a multiplexed signal λ_0-λ_n, already multiplexed by the optical coupler 11, is input to an input port of an input waveguide array 32. The multiplexed signal is separated into individual optical signals λ_0-λ_n by the AWG 12, and the separated optical signals are output from the respective output ports of an output waveguide.

Conclusion

Since Koga does not describe features recited in independent claim 3, the rejection should be withdrawn and independent claim 3 allowed.

PAGE 2: REJECTION OF CLAIM 13 UNDER 35 U.S.C. §102(b) AS BEING ANTICIPATED BY KOGA

The Examiner rejects independent claim 13 under 35 U.S.C. §102(b) as being anticipated by Koga.

Independent claim 13 recites a wavelength division multiplexing optical transmission apparatus "transmitting a multiplexed signal carrying a first group of optical signals at different wavelengths, comprising: an arrayed-waveguide grating comprising: a first output port outputting the multiplexed signal carrying the first group of optical signals of different wavelengths respectively input from input ports."

As Applicants argued in the traverse of the rejection of claim 3, Koga does not teach an arrayed-waveguide grating including a first output port outputting the multiplexed signal carrying the first group of optical signals of different wavelengths respectively input from input ports. Koga teaches a branching filter.

Since Koga does not describe features recited in independent claim 13, the rejection should be withdrawn and independent claim 13 allowed.

PAGES 3-4: REJECTION OF CLAIMS 7 AND 14 UNDER 35 U.S.C. §103(a) BY KOGA IN VIEW OF IWAOKA ET AL. (U.S.P. 4,893,353)

Dependent claim 7 recites a wavelength multiplexing optical apparatus "wherein the light emitting means is a wavelength tunable light source having a wavelength locker function, and generates signal light whose wavelength is swept within the bandwidth of the port at which the

pilot signal is input, and the light detecting means detects the amount of fluctuation in the filter characteristics of the port by detecting the swept signal light."

Dependent claim 14 recites a wavelength multiplexing optical apparatus "wherein the light emitter includes a wavelength locker and is a wavelength tunable light source generating signal light whose wavelength is swept within the bandwidth of the port at which the pilot signal is input, and the light detector detects the fluctuation in the filter characteristics of the port by detecting the swept signal light."

The Action concedes that Koga does not teach:

> . . . light emitting means which is a wavelength tunable light source having a wavelength locker function, and generates signal light whose wavelength is swept within the bandwidth of the port, or a plurality of light sources.

(Action at page 3).

Nevertheless, the Examiner rejects dependent claims 7 and 14 under 35 U.S.C. §103(a) as being unpatentable over Koga in view of Iwaoka. (Action at pages 3-4).

The Examiner contends that it is obvious to modify Koga in view of Iwaoka and that "the detecting means detecting the amount of fluctuation in the filter characteristics of the port by detecting the swept signal light is inherently shown by (the) Iwaoka et al's device." (Action at page 3).

Examiner's Contention of Inherency Unsupported

The Examiner has not provided any support for such an inherency argument. As set forth in MPEP 2112:

> To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

That is, the Examiner does not provide any support, whatsoever in rejecting the claims 7 and 14 feature of detecting an amount of fluctuation in the filter characteristics of the port by detecting the swept signal light.

Conclusion

Since the Examiner's contentions of inherency are unsupported, the rejection should be withdrawn and claims 7 and 14 allowed.

PAGES 3-4: REJECTION OF CLAIMS 9 AND 15 UNDER 35 U.S.C. §103(a) BY KOGA IN VIEW OF IWAOKA

Dependent claim 9 recites a wavelength multiplexing optical apparatus "wherein the light emitting means comprises a plurality of light sources, and the light detecting means detects the amount of fluctuation in the filter characteristics of the port at which the pilot signal is input, by comparing received light levels between the plurality of light sources."

Dependent claim 15 recites a wavelength multiplexing optical apparatus "wherein the light emitter comprises a plurality of light sources, and the light detector detects the amount of fluctuation in the filter characteristics of the port at which the pilot signal is input by comparing received light levels between the plurality of light sources."

The Action concedes that Koga does not teach:

> light emitting means which is a wavelength tunable light source having a wavelength locker function, and generates signal light whose wavelength is swept within the bandwidth of the port, or a plurality of light sources.

(Action at page 4).

Nevertheless, the Examiner rejects dependent claims 9 and 15 under 35 U.S.C. §103(a) as being unpatentable over Koga in view of Iwaoka. (Action at pages 3-4).

The Examiner contends that contends that it is obvious to modify Koga in view of Iwaoka and that "the detecting means (is) inherently shown by Iwaoka et al's device." (Action at page 4).

As Applicants argued above in traversing the rejection of claims 7 and 14, the Examiner has not provided any support for such an inherency argument.

That is, the Examiner does not provide any support, whatsoever in rejecting the claims 9 and 15 features of detecting an amount of fluctuation in filter characteristics of the port at which a pilot signal is input, by comparing received light levels between a plurality of light sources.

Conclusion

Since the Examiner's contentions of inherency are unsupported, the rejection should be withdrawn and claims 9 and 15 allowed.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: August 25, 2004

By: Paul W. Bobowiec
Paul W. Bobowiec
Registration No. 47,431

1201 New York Avenue, NW, Suite 700
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501